

**BEFORE  
THE PUBLIC SERVICE COMMISSION  
OF SOUTH CAROLINA**

**DOCKET NO. 2019-184-E**

<b>IN RE:</b> South Carolina Energy Freedom Act (H.3659) ) Proceeding to Establish Dominion Energy ) South Carolina, Incorporated's Standard Offer, ) Avoided Cost Methodologies, Form Contract ) Power Purchase Agreements, Commitment to ) Sell Forms, and Any Other Terms or ) Conditions Necessary (Includes Small Power ) Producers as Defined in 16 United States Code ) 796, as Amended) – S.C. Code Ann. Section ) 58-41-20(A) )	<b>PRE-HEARING BRIEF OF THE SOUTH CAROLINA OFFICE OF REGULATORY STAFF</b>
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This matter comes before the Public Service Commission of South Carolina (“the Commission”) pursuant to the requirements in the South Carolina Energy Freedom Act (“Act 62”).<sup>1</sup> According to Act 62,

[a]s soon as is practicable after the effective date of this chapter, the commission shall open a docket for the purpose of establishing each electrical utility's standard offer, avoided cost methodologies, form contract power purchase agreements, commitment to sell forms, and any other terms or conditions necessary to implement this section.... Within such proceeding the commission shall approve one or more standard form power purchase agreements for use for qualifying small power production facilities not eligible for the standard offer. ...The commission may approve multiple form power purchase agreements to accommodate various generation technologies and other project-specific characteristics.... Any decisions by the commission shall be just and reasonable to the ratepayers of the electrical utility, in the public interest, consistent with PURPA and the Federal Energy Regulatory Commission's implementing regulations and orders, and nondiscriminatory to small power producers; and shall strive to reduce the risk placed on the using and consuming public....

*See* S.C. Code Ann. 58-41-20.

<sup>1</sup> South Carolina Energy Freedom Act, H. 3659, 123<sup>rd</sup> Legislative Session (2019).

Per the analyses and calculations performed by the South Carolina Office of Regulatory Staff (“ORS”) expert witness Brian Horii, the following rates should be ordered for Dominion Energy South Carolina, Inc. (“DESC”):

Rate PR-1 Avoided Energy Rate for Solar QFs (\$/kWh)	\$0.03299
Rate PR-Standard Offer Avoided Energy Rate for Solar QF 2020-2024 (\$/kWh)	\$0.02174
Rate PR-Standard Offer Avoided Energy Rate for Solar QF 2025-2029 (\$/kWh)	\$0.2457
Avoided Capacity: Standard Offer Non-Solar QF <i>December through February, 6:00am to 9:00am</i>	\$247.25/MWh
Avoided Capacity: Standard Offer Solar QF's, <i>All hours</i>	\$3.79/MWh
Avoided Capacity: Solar with Storage	\$7.08/kW per year
Rate PR-1, <i>Dec. through Feb., 6:00am to 9:00am</i>	\$0.24725/kWh

## I. STATEMENT OF THE CASE

Under Act 62, the Commission is expressly directed to consider and promote South Carolina’s policy of encouraging renewable energy and ensuring the promotion of the public interest while ensuring that no costs or expenses incurred by the Company in compliance with Act 62 are then borne by the Company’s general body of South Carolina customers without an affirmative finding, which authorizes such cost shift, made by the Commission.<sup>2</sup> The analysis and resulting recommendations put forth by ORS’s witness Brian Horii fairly follows the requirements set forth under Act 62 and should be adopted by the Commission.

<sup>2</sup> See S.C. Code Ann. § 58-41-20(F)(2), S.C. Code Ann. § 58-41-20(G), and Section 16 of Act 62.

## **II. PROCEDURAL POSTURE**

On May 23, 2019, the Commission opened Docket No. 2019-176-E to initiate a proceeding pursuant to Act 62 to “establish each electrical utility's standard offer, avoided cost methodologies, form contract power purchase agreements, commitment to sell forms, and any other terms or conditions necessary” as required by newly enacted S.C. Code Section 58-41-20(A) (the “Public Utility Regulatory Policies Act of 1978 (“PURPA”) Implementation and Administration Provisions”). Subsequently, pursuant to a motion adopted by the Commission at its weekly agenda meeting on May 29, 2019, the Commission instructed the Chief Administrator to open separate dockets for each electrical utility in which the PURPA Implementation and Administration Provisions would be addressed. Accordingly, on May 30, 2019, Docket No. 2019-184-E was opened for DESC.

On September 13, 2019, the Commission issued Order Nos. 2019-103-H which set a due date for the filing of pre-hearing briefs of September 23, 2019, and any responses to pre-hearing briefs to be due on September 30, 2019. On September 16, 2019, via an e-mail correspondence, Commission staff “strongly encouraged” parties to file pre-hearing briefs. *See* E-mail from David Stark sent to all parties on September 16, 2019. By Commission Order No. 2019-108-H, dated September 19, 2019, the Commission amended the due date for initial pre-hearing briefs in this docket to September 30, 2019 and for reply briefs to October 8, 2019.

The Company has filed the direct testimony of seven (7) witnesses. ORS filed the testimony of two (2) witnesses, Brian Horii and Robert A. Lawyer. Through the testimony of ORS witnesses Horii and Lawyer, ORS made several recommendations to the Commission, ORS believes that these recommendations are just and reasonable to DESC’s customers, consistent with PURPA and the Federal Energy Regulatory Commission’s (“FERC”) implementing regulations

and orders, non-discriminatory to Qualifying Facilities (“QFs”), and reduce the risk placed on the using and consuming public. ORS’s witness’ recommendations result in an accurate and fair quantification of the Company’s avoided cost prices and accompanying integration charges. The adoption by the Commission of ORS’s recommendations would promote South Carolina’s policy of encouraging renewable energy.

### **III. LEGAL ISSUES AND PRE-FILED TESTIMONY SUMMARY**

#### **1. The Company’s Avoided Energy Calculation**

DESC has created a confusing case where integration costs are calculated in one manner by Navigant for the Variable Integration Charge (“VIC”) and calculated in a different way using different assumptions for Rate PR-1 and Standard Offer rates. For Rate PR-1 and Standard Offer rates, DESC proposed to reflect integration costs through a reduction in the avoided energy rates provided to solar QFs. In ORS witness Horii’s direct testimony, he discusses the flaws of the Company’s proposal for integration costs for Rate PR-1 and Standard Offer rates and recommends that integration-related costs not be adopted for Rate PR-1 and Standard Offer rates.

The Company calculates avoided energy costs, as described by Company witness Neely in his direct testimony (p. 7), by using a methodology known as the Difference in Revenue Requirements (“DRR”). The DRR method calculates the revenue requirements associated with two (2) different resource plan scenarios: a base case without a QF, and a change case with a QF.

This is one of the generally accepted methods for calculating PURPA avoided energy costs and is used throughout the United States. It is the same methodology used by DESC in Docket No. 2018-2-E and approved by the Commission in Order No. 2018-322(A), and ORS believes that it is reasonable to use a solar profile for solar specific QFs. However, ORS witness Horii disagrees with the inputs and assumptions that DESC employed in developing their avoided energy cost

estimates. DESC overstated the need for additional operating reserves to accommodate the integration of solar resources. The additional operating reserves reduce the net avoided energy costs estimated for solar resources. Therefore, an overestimation of the need for additional operating reserves incorrectly changes the avoided energy cost rates for solar resources.

ORS witness Horii identified three main concerns with the Company's calculation of proposed avoided energy costs:

- 1) The Company overstated the amount of operating reserves required for the incremental 100 MW of solar in the change case;
- 2) The Company's modeling requires operating reserves to provide solar integration services instead of potentially lower cost types of reserves; and
- 3) The Company's use of flawed assumptions that yield inconsistent results.

To correct these concerns ORS witness Horii recommends that avoided energy costs should not be adjusted for additional operating costs for solar projects. Instead, avoided energy costs should be estimated similar to Docket No. 2018-2-E, based on the normal operating reserve level (no additional operating reserve requirement) for both the base case and the solar change case.

ORS makes the following avoided energy rate recommendations:

<b>Time Period</b>	<b>DESC Proposed (\$/kWh)</b>	<b>ORS Recommended (\$/kWh)</b>
May 2019 - April 2020	.03149	.03299
2020 - 2024	.02126	.02174
2025 - 2029	.02450	.02457

## 2. The Companies' Avoided Capacity Calculation

DESC also calculated the avoided cost of capacity using the DRR method to quantify the avoided cost of generation capacity. The DRR methodology is one of the generally accepted methods for calculating PURPA avoided capacity costs and is used throughout the United States. It is the same methodology used by DESC in Docket No. 2018-2-E and approved by the Commission in Order No. 2018-322(A). However, ORS disagrees with certain inputs and assumptions that DESC employed in developing their avoided capacity cost estimates. ORS's concerns and corrections are discussed in detail in ORS Witness Horii's direct testimony. Mr. Horii notes that DESC understates the avoided capacity cost estimates due to the following unrealistic assumptions:

- 1) The Company incorrectly concluded incremental solar provides no capacity value in the winter;
- 2) The Company performs a reasonable probabilistic calculation, but does not apply the results to its avoided capacity calculation; and
- 3) The Company's calculations model purchased power instead of using the CT models used by the Company in its IRP.

Witness Horii also disagrees with Company witness Lynch that incremental solar provides no capacity value in the winter season or that capacity need is driven solely by peak demand. As Mr. Horii points out, Company witness Lynch also performed a probabilistic analysis known as the Effective Load Carrying Capacity ("ELCC") method which demonstrates a solar capacity value equal to 24% of nameplate capacity.

Mr. Horii recommends capacity values that are higher than those proposed by DESC using the assumptions and calculations detailed in his testimony. A summary of his recommendations compared to DESC's proposed rates are shown below:

Rate	DESC Proposed	ORS Recommended
Standard Offer Non-Solar QF's <i>Dec thru Feb, 6:00am to 9:00am</i>	\$73.46/MWh	\$247.25/MWh
Standard Offer Solar QF's <i>All hours</i>	\$0.00	\$3.79/MWh
Solar with Storage	\$3.17/kW per year	\$7.08/kW per year
Rate PR-1 <i>Dec thru Feb, 6:00am to 9:00am</i>	\$0.07346/kWh	\$0.24725/kWh

### 3. The Company's Variable Integration Charge

According to witness Horii, the overall concepts of the methodology used in DESC's Integration Study by Navigant are reasonable. Integrating renewable generation does create additional costs for utilities. E3 has observed that increasing amounts of solar and wind generation can require additional ramping capability and reserves to meet both the intermittent nature of solar and wind generation and the diurnal ramping characteristics of solar generation. The cost impact can include higher start-up costs, fuel costs, and operating and maintenance costs resulting from resources operating at levels below their maximum efficiency to allow upward headroom to ramp up output. Costs can also increase for additional generation plant required to provide additional flexible capacity.

ORS witness Horii does consider the Company's analysis to be an acceptable approach to estimating solar integration costs, however, he does make the following observations:

- 1) The assumptions used by Navigant unreasonably increase the risks of uncertain variable generation to the Company which inflates the resulting variable integration costs. He therefore proposes a more balanced approach which results in a reasonable value for the VIC.;
- 2) The Company failed to conduct an analysis that balances risks and costs in determining the additional amount of operating reserves that would need to be carried due the existence of variable solar resources on the system;

- 3) The Company is unreasonably risk averse in its determination of the amount of additional operating reserves due to potential solar forecast error; and
- 4) The Integration Study overstates operating reserves needed by holding reserve levels constant over each day, rather than allowing operating reserves to reflect how any solar forecast risk would not be at DESC's high estimated levels over the entire day.

According to ORS witness Horii, integration costs should be reduced by modifying the Company's methodology in determining the solar forecast uncertainty and applying his calculated 36.2% reduction of forecast uncertainty.

The forecast uncertainty drives the amount of additional reserves that Navigant has modeled for DESC. Since the forecast uncertainty that needs to be accounted for according to witness Horii is 36.2% less than modeled, the amount of additional reserves for solar should also be 36.2% less than estimated. To convert that reserve change to a cost impact, he referred to Navigant's estimates of integration costs by reserve level. That figure shows that the integration costs can be estimated as a simple linear relationship to additional reserve levels. Because of this linear relationship, the 36.2% reduction in forecast uncertainty results in a 36.2% reduction in integration costs. As a result, witness Horii believes the Company's proposed VIC of \$4.14/MWh should be reduced by 36.2% to \$2.29/MWh; as shown in Table 5 on page 19 of witness Horii's pre-filed direct testimony.

Additionally, witness Horii reviewed the distribution of solar forecast error to determine the percentage of time that forecast error could exceed his recommended level. As provided in his testimony, witness Horii determined that there was a less than 1% chance that solar forecast error would exceed his recommended reduction to DESC's Integration Study estimate by 36.2%. ORS believes this is a reasonable balance of risk and costs, especially given witness Horii's other concerns over the Navigant costs being biased upward. ORS therefore concludes that, given that less than 1% of hours would only be problematic if there were also the simultaneous problems of



lower than expected output from other scheduled generators, limited import ability, and higher than expected customer demand,

**4. The Company's Form Contract Power Purchase Agreement ("PPA") and Commitment to Sell Form Recommendations**

According to witness Horii, it is his understanding that the Company's proposed notice of commitment to sell forms are consistent with PURPA and the FERC implementation guidelines. The commitment to sell forms function to establish a non-contractual legally enforceable obligation ("LEO") option for a QF which contractually obligates the QF to sell and deliver its full output to the utility and the utility to purchase the delivered energy and capacity at the utility's avoided cost rates over the specified term length.

Witness Horii's pre-filed direct testimony identifies a lack of clarity in clause 8(iii) of DESC's Commitment to Sell form. Although this provision ensures that QFs will not have an automatic cancellation of their Notice of Commitment to Sell if interconnection facilities are not available, it is unclear which entity is responsible for installing additional facilities to establish adequate interconnection facilities, and whether the QF is eligible for any payments or damages due to delays.

Witness Horii believes that the Company offered a 10-year contract term length with terms and conditions consistent with PURPA and FERC implementation guidelines. He further believes the Companies' Standard Form PPA for Large QFs conforms to industry standards. Act 62 requires utilities to include 10-year contract terms in the Standard Offer. According to witness

Horii, the Standard Offer options are consistent with PURPA and the proposed standard offer PPA, and terms and conditions, are commercially reasonable.

However, witness Horii also believes that certain aspects of the Company's proposed terms and conditions are inconsistent with PURPA. According to witness Horii, the limitation that the PPA may be terminated if the QF produces energy in excess of the "estimated annual energy production" is inconsistent with PURPA's "mandatory obligation." According to witness Horii, the Company's proposed Standard Offer contemplates refusal to accept the over-production, which violates PURPA standards. An alternative would be for the PPA to more clearly define the annual expected contract energy, with some expected variability due to changing weather conditions, and designate that any overproduction delivered to the utility will be compensated at the current approved rates as stated in the Standard Offer tariff.

#### **5. DESC's Compliance with Other Portions of Act 62**

ORS witness Lawyer discussed ORS's review of DESC's compliance with certain sections of Act 62. Witness Lawyer testified that ORS concluded DESC's filings included each of the items required by Section 58-41-20(A) of the Act. Witness Lawyer emphasized the Act grants the Commission flexibility and discretion in determining whether to hold avoided cost proceedings more frequently than every 24 months.

Witness Lawyer highlighted that customers are ultimately responsible for all avoided cost payments through the annual fuel proceeding under S.C. Code Ann. 58-27-865, and that the Company's variable integration charges can help to limit subsidization of QFs by ratepayers.

ORS witness Lawyer testified DESC's annual fuel proceeding in 2020, in Docket No. 2020-2-E, is the most appropriate proceeding for DESC to implement the "true-up" of avoided energy and capacity, VIC, and Value of DER rates.

Mr. Lawyer expressed concerns with the various Rate PR tariffs proposed by DESC. Witness Lawyer recommended that DESC add language to clarify the effects of an executed LEO in the “Limiting Provisions” in the Rate PR-1 and Rate PR-Standard Offer tariffs. Witness Lawyer also recommended DESC add language to the Rate PR-Avoided Cost Methodology tariff that states the Commission must approve any updates to the factors or analysis.

ORS witness Lawyer submits that the ORS recommendations are just and reasonable to customers, consistent with PURPA and FERC regulations and orders, non-discriminatory to QFs, and serve to reduce the risk placed on the using and consuming public.

#### IV. CONCLUSION

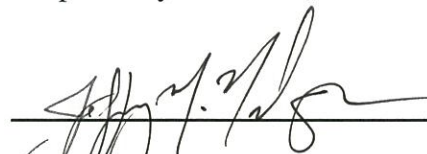
ORS will present reliable and substantial evidence to support a decision by the Commission in adopting ORS’s recommendations. Based on the recommendations of ORS witnesses Horii and Lawyer, ORS recommends that the Commission:

- 1) Reject DESC’s proposed avoided energy rates for solar projects that are not assessed in the VIC;
- 2) Reject DESC’s proposed avoided energy rates for solar projects that are assessed a VIC;
- 3) Require the Company to separately state the avoided energy rates from the VIC in the Rate PR-1 and Standard Offer tariffs;
- 4) Approve ORS’s proposed avoided energy rate calculations;
- 5) Reject DESC’s proposed VIC and approve ORS’s \$2.29/MWh VIC;
- 6) Reject DESC’s avoided capacity rates for both solar and non-solar QFs;
- 7) Approve ORS’s avoided capacity rates that reflect a fair and unbiased valuation consistent with industry standard assumptions;

- 8) Require the Company clarify a calculation method to account for “expected uncertainty” of QF production forecasts in the Standard Offer PPA, clarify language regarding interconnection delays in the Notice of Commitment to Sell form, and request the Company revise the form PPA to update references to SCANA Corporation;
- 9) Require DESC to add language to the Rate PR-1 and Rate PR-Standard Offer tariffs clarifying the effects of an executed LEO on the “Limiting Provisions; and
- 10) Require DESC to add language in Section C of the Rate PR-Avoided Cost Methodology tariff stating any updates to the factors or analysis must be approved by the Commission.

ORS’s recommendations result in a just and reasonable result for the Companies’ customers while promoting South Carolina’s policy of encouraging renewable energy.

Respectfully submitted,



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September 30, 2019